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David C. Shelton, Director
Hazardous Materials & Waste Management Division
Colorado Department of Health
4210 East 11th Avenue
Denver, CO 8022

Attn: G. R. Dancik

Dear Mr. Shelton:

The General Laboratory in Building 881 at Rocky Flats Plant is undergoing renovation. As part of this renovation it is necessary to expedite the closure and removal of a RCRA regulated waste treatment unit. A closure plan for RCRA Regulated Unite 32, Bench Scale Treatment Unit was submitted to the Colorado Department of Health (CDH) on October 3, 1988. Through this letter we are requesting expedited approval to remove this unit in order to complete the laboratory renovation by June, 1989. Failure to close Unit 32 in a timely manner will cause delays to the renovation project and impact the ability of the General Laboratory to perform environmental and production analyses.

The General Laboratory does not intend to maintain a treatment unit following the closure, removal, and disposition of Unit 32. Satellite collection area 1435 was established in new lab space in Room 276, Building 881 as the accumulation point for waste generated from cyanide sample preparation and analysis.

DESCRIPTION OF BENCH SCALE TREATMENT UNIT 32

The bench scale treatment process for the conversion of cyanide to cyanate occurs in the Building 881 laboratory on a regular basis. Samples generated in other laboratories are transferred to the fume hood for analysis of cyanide content using a cyanide still. Wastes from this analysis are collected in a four-liter polyethylene bottle in the same fume hood. When a bottle is full, the contents are treated in the bottle with sodium or calcium hypochlorite to oxidize the cyanide to cyanate. A residual chlorine-specific ion electrode is used to determine when the conversion is complete. The neutralized contents of the bottle are then poured down the process waste drain for pipeline transport to Building 374 for further treatment.

The treatment unit consists of a 4-foot by 5-foot painted metal fume hood, three four-liter polyethylene bottles, a glass beaker, and a chlorine-specific ion electrode. The neutralized contents of the bottle are poured into a process waste drain for pipeline transport to Building 374 for further treatment. The drain and waste pipeline are

not addressed in this proposal for closure because they will be used by the laboratory personnel for RCRA regulated wastes after the treatment unit is decommissioned and because the material poured down the drain from this treatment unit is not regulated under RCRA.

CLOSURE PLAN

This closure plan addresses the sampling and analysis procedures for the determination of cyanide contamination to the hood and steps used in its dismantling, packaging, and disposal. The remaining equipment used for the treatment unit will be packaged in a white 55-gallon drum and disposed of as a hazardous mixed waste.

SAMPLING

The extent and location of cyanide contamination in the hood will be determined by wiping different areas of the hood with filter paper moistened with a sodium hydroxide solution (see attached sampling procedure). The smears will be placed in a beaker containing the sodium hydroxide solution and distilled following the guidelines of EPA Method 335.3 CLP-M, Cyanide Total (In Water), USEPA, Method for Total Cyanide Analysis in Water, SOW. 7/87, Rev. 12/87.

ANALYSIS

The prepared samples will be analyzed using the General Laboratory procedure L-6238A, "Cyanide In Water and Waste Water Using Technicon Traacs 800 Method." The distillate is converted to cyanogen chloride by reaction with chloramine-T. This subsequently reacts with pyridine and barbituric acid to produce a red color complex which is measured colorimetrically at 570 nm. The working range for this method is 5 to 500 ppb.

DISPOSAL

The portions of the hood which have a cyanide contamination level at or below the blank values will be disposed of as low-level waste. Those portions which are above the blank values will be broken down by mechanical means as necessary for packaging. Following size reduction, the contaminated portions of the hood will be packaged in white drums and/or boxes per appropriate waste packaging requirements. The drums/boxes will be disposed of at an approved facility.

SAMPLING PROCEDURE FOR PRESENCE OF CYANIDE
IN
BENCH SCALE TREATMENT UNIT 32

1. Dissolve 6.0 g NaOH in distilled H_2O and dilute to 1000 ml in a volumetric flask. Mix thoroughly.

2. Tear 10 pieces of Whatman 541 Hardened Ashless Filter Paper into quarters.

3. With a graduated cylinder, transfer 200 ml of the NaOH solution to a plastic beaker labeled "Blank #1."

4. Drop 8 quarter pieces of the paper into the beaker, cover the beaker with plastic wrap.

5. Transfer another 200 ml portion of the NaOH solution to a beaker labeled "floor."

6. Moisten on quarter piece of paper by dipping it in the solution in the beaker and wipe an area of the floor of the hood covering at least 6 in^2, then drop the paper into the beaker. Wipe any remaining liquid with a dry quarter piece of paper and transfer it to the beaker also. Continue in this manner until four different areas of the floor have been wiped. Cover the beaker and set it aside.

7. Following the same steps as for the floor, take two more wipe samples, one of the sides and ceiling, and on of the outside, wiping four different areas and using eight quarter pieces of paper for each sample.

8. Prepare another blank, labeled "Blank #2."

9. Distill each sample for determination of cyanide. Transfer the entire contents of each beaker, <u>including the paper</u>, to the cyanide distillation flasks. Use a plastic rod, if necessary, to facilitate transferring the paper. Rinse each paper several times with distilled H_2O, transferring the washings to the distillation flasks. Add enough water to each flask to bring the volume to approximately 500 ml.

10. Add 10 ml of 2.5 NaOH to each scrubber tube, and add enough water to give an adequate depth of liquid in each.

11. Distill the samples according to EPA Method 335.2, CLP-M Cyanide, Total (In Water), Steps 8.1.2 through 8.1.4

12. When the distillation is complete, transfer the distillates to 100 ml volumetric flasks and dilute the volume with distilled H_2O.

13. The Water Lab will analyze the samples for cyanide.